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SCS ENGINEERS

Results of the 2nd Quarter 2005 Groundwater Monitoring and Sampling Event

**Ghilotti Construction Company
246 Ghilotti Avenue
Santa Rosa, California
(SCDHS-EHD Site #02017; NCRWQCB Site #1TSO501)
(Assessor's Parcel No. 134-171-053)**

File Number 01203312.00

Prepared by:

**SCS Engineers
3645 Westwind Boulevard
Santa Rosa, California 95403**

To:

**Mr. Cliff Ives
Sonoma County Department of Health Services
475 Aviation Blvd., Suite 220
Santa Rosa, California 95403**

August 18, 2005

Mr. Cliff Ives
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LIMITATIONS/DISCLAIMER

This report has been prepared for the Ghilotti Construction Company with specific application to a Quarterly Monitoring event for the property located at 246 Ghilotti Avenue, Santa Rosa, California. Field activities and sampling were conducted in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, either expressed or implied, is made as to the professional advice presented herein.

Access to the property and the surrounding area was and is limited by buildings, roadways, underground and above-ground utilities and other miscellaneous site and site vicinity features. Therefore, the field exploration and points of subsurface observation were and are somewhat restricted.

Changes in site use and conditions may occur due to variations in rainfall, temperature, water usage, or other factors. Additional information which was not available to the consultant at the time of this quarterly monitoring event or changes which may occur on the site or in the surrounding area may result in modification to the site that would impact the summary presented herein. This report is not a legal opinion.

We trust this report provides the information you require at this time. If you have any questions, or require any additional information, please contact SCS at (707) 546-9461.

ILC

Kevin L. Coker REA 7887
CA registration fees paid through 06/30/06

8/14/05

Date



Stephen Knutel
Stephen Knutel PG #7674
CA registration fees paid through 07/31/07

18. Aug. 2005

Date

Introduction

SCS Engineers (SCS) is pleased to present the results of the 2nd quarter 2005 groundwater monitoring and sampling event at 246 Ghilotti Avenue, Santa Rosa, California. A summary of historical site investigative activities is presented in previous reports (PNEG¹, 1996, 2002b, 2005a). The site is located as shown on the Site Location Map, Figure 1. General site features are as shown on the Site Plan, Figure 2.

Groundwater Monitoring

Depth to groundwater measurements were collected from MW-3 and MW-5 through MW-10 on June 13, 2005. MW-1, MW-2 and MW-04 were inaccessible for this sampling event as they have been covered by recent paving activities which occurred at the subject site. Prior to the next sampling event, the wells will be located and uncovered. Depths to groundwater ranged from approximately 4 to 6.5 feet below existing ground surface (bgs). Groundwater elevations, flow direction, and gradient were calculated from this data. The depth to groundwater measurements, were combined with the well casing elevations to calculate the groundwater flow direction and gradient. Casing and groundwater elevations are reported in feet relative to mean sea level. Depths to groundwater are expressed in feet. For the 2nd quarter 2005 monitoring event, the groundwater flow direction was interpolated to be west at a calculated gradient of 0.005. Historical and current groundwater elevation data are presented in Table 1, and on Figure 2.

Groundwater Sampling

After depth to groundwater measurements were taken on June 13, 2005, wells MW-3 and MW- 5 through MW-10 were checked for the presence of free product using an oil/water interface probe and by subjective evidence. No free product was reported during this sampling event. The wells were then purged of approximately 3 well casing volumes of groundwater, or at least 5 gallons, whichever was greater, using a submersible pump. Temperature, pH, conductivity, turbidity, and dissolved oxygen were measured during purging to help demonstrate that fresh groundwater was entering the well casing for sampling. Each well was allowed to recover prior to sampling. Groundwater samples were collected using a separate disposable bailer for each well, and were transferred into the appropriate containers supplied by the laboratory for analysis. The groundwater samples were labeled, stored under refrigerated conditions, and transported under Chain-of-Custody documentation to Analytical Sciences (AS) in Petaluma, California. AS is a California Department of Health Services certified laboratory for the analyses requested. AS' current certifications have been reviewed and are on file at SCS. All samples were collected in accordance with Standard Soil and Water Sampling Procedures and QA/QC Protocol. Information obtained during sampling was recorded on groundwater field sampling forms, and Well Purge Records were generated, copies of which are presented in appendix A. Purge water from recent groundwater sampling activities is stored at the site in 55-gallon UN/DOT-approved drums, pending disposal.

¹ Pacific Northwest EnviroNet Group, Inc. (PNEG) became a part of SCS in July 2003.

Laboratory Analysis

The monitoring well samples were analyzed for the five ether-based oxygenates [methyl tert-butyl ether (MTBE), diisopropyl ether (DIPE), ethyl tert butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butyl alcohol (TBA)] using EPA Method 8260M.

Groundwater Analytical Results

For the most recent sampling event on June 13, 2005, MTBE was detected in samples collected from MW-3, MW-7, MW-9, and MW-10 at concentrations of 23 ug/L, 1.9 ug/L, 1.3 ug/L, and 11 ug/L respectively. MTBE was not detected above the laboratory report detection limit (RDL) in the samples collected from MW-5, MW-6, and MW-8. MW-05, MW-06, and MW-08 have been below the laboratory RDL for all target analytes for two consecutive quarters. As discussed previously, MW-1, MW-2, and MW-4 have been covered by recent paving activities at the site and will be located prior to the next scheduled sampling event at the Site. All samples were below the laboratory RDL for the other fuel oxygenate analytes. Historical and recent monitoring well analytical results are summarized in Table 3. Analytical results to date for MTBE are plotted on the attached time versus concentration diagram (Diagram A), and contoured on the isoconcentration map for MTBE, Figure 3. As a cost saving measure, SCS recommends limiting the analytical suite at the Site to MTBE by EPA Method 8020.

Discussion

As indicated on Figure 3, the lateral extent of the shallow MTBE groundwater impact has not been adequately assessed to the west/southwest of MW-10 and to the north of MW-07. The Sonoma County Department of Health Services (SCDHS) has subsequently requested the submittal of a Work Plan for additional site characterization (SCDHS, 2005). SCS has initiated preparation of a Work Plan for additional site characterization which will be submitted to the SCDHS by or before the requested date of September 11, 2005.

Attachments
File No. 01203312.00

- Figure 1: Site Location Map
Figure 2: Site Plan - Groundwater Flow Direction and Gradient for 06/13/05
Figure 3: Isoconcentration Map – MTBE in Groundwater for 06/13/05

Key to Diagrams and Tables

- Diagram A: MTBE & Groundwater Elevation vs Time
Table 1: Groundwater Flow Direction and Gradient - 1996 to Present
Table 2: Domestic Well Analytical Results
Table 3: Groundwater Analytical Results – Monitoring Wells

Appendix A

Well Purge Records, dated June 13, 2005

Appendix B

Analytical Sciences report #5061711, dated June 29, 2005

Reference List
File No. 01203312.00

- PNEG, 1996. Monitoring Report, Sensitive Site Receptor Survey, and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, California, October 15.
- PNEG, 1997a. Monitoring Report and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, February 5.
- PNEG, 1997b. September 1997 Semiannual Groundwater Monitoring Report and Request for Site Closure, 246 Ghilotti Avenue, Santa Rosa, October 17.
- PNEG, 1998a. Semiannual Groundwater Monitoring Report for June 1998 Sampling, 246 Ghilotti Avenue, Santa Rosa, August 1998.
- PNEG, 1999a. Status Report for 246 Ghilotti Avenue, Santa Rosa, December 14.
- PNEG, 1999b. Results of the December 1999 Quarterly Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, February 28.
- PNEG, 2000a. Results of the March 2000 Quarterly Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, May 31.
- PNEG, 2000b. Results of the 2nd Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, August 7.
- PNEG, 2000c. Results of the 3rd Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, December 11.
- PNEG, 2001a. Results of the 4th Quarter 2000 Monitoring Event and Domestic Well Sampling at 246 Ghilotti Avenue, Santa Rosa, February 23.
- PNEG, 2001b. Results of the 2nd Quarter 2001 Groundwater Monitoring and Sampling and Domestic Well Sampling Event at 246 Ghilotti Avenue, Santa Rosa, June 6.
- PNEG, 2001c. Results of the 3rd Quarter 2001 Groundwater Monitoring and Sampling and Domestic Well Sampling Event at 246 Ghilotti Avenue, Santa Rosa, September 7.

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- PNEG, 2001d. Results of the 4th Quarter 2001 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, November 30.
- PNEG, 2002a. Results of the 1st Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, March 20.
- PNEG, 2002b. Work Plan to Define the Lateral and Vertical Extent of MTBE Contamination- 246 Ghilotti Avenue, Santa Rosa, California, May 28.
- PNEG, 2002c. Results of the 2nd Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, June 6.
- PNEG, 2002d. Results of the 3rd Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, August 14.
- PNEG, 2002e. Results of the 4th Quarter 2002 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, November 13.
- PNEG, 2003a. Results of the 1st Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, March 17.
- PNEG, 2003b. Results of the 2nd Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, May 8.
- SCDHS, 2005. Work Plan Directive from Mr. Cliff Ives to Mr. Richard Ghilotti, July 11.
- SCS, 2003a. Results of the 3rd Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, August 13.
- SCS, 2003b. Results of the 4th Quarter 2003 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, November 20.
- SCS, 2004a. Results of the 1st Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, January 29.
- SCS, 2004b. Results of the 2nd Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, May 7.
- SCS, 2004c. Results of the 3rd Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, August 9.
- SCS, 2004d. Results of the 4th Quarter 2004 Groundwater Monitoring and Sampling Event at 246 Ghilotti Avenue, Santa Rosa, California, December 29.
- SCS, 2005a. Results of Additional Subsurface Investigation, at 246 Ghilotti Avenue, Santa Rosa, California, May 6.

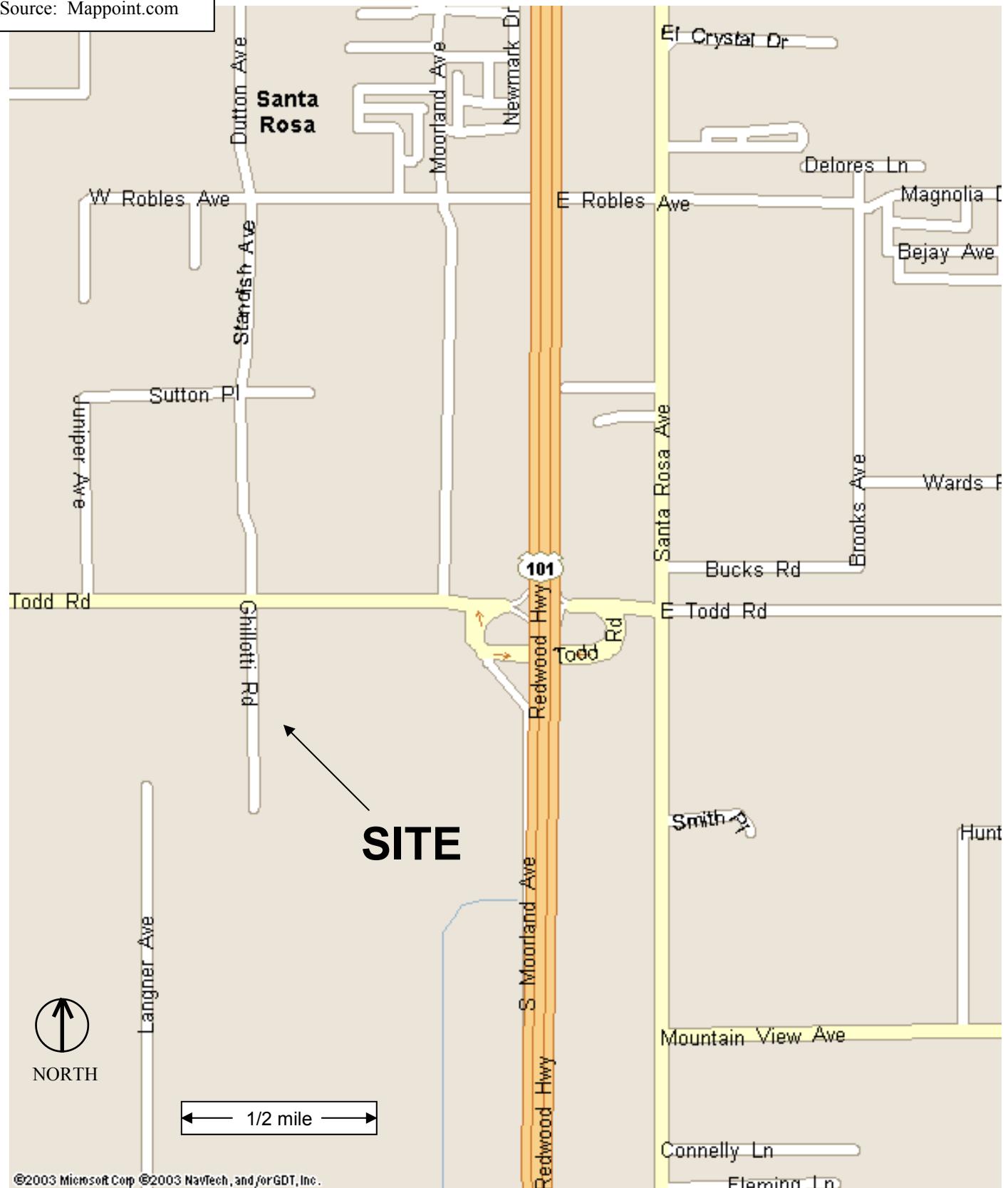
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**Distribution List
File No. 01203312.00**

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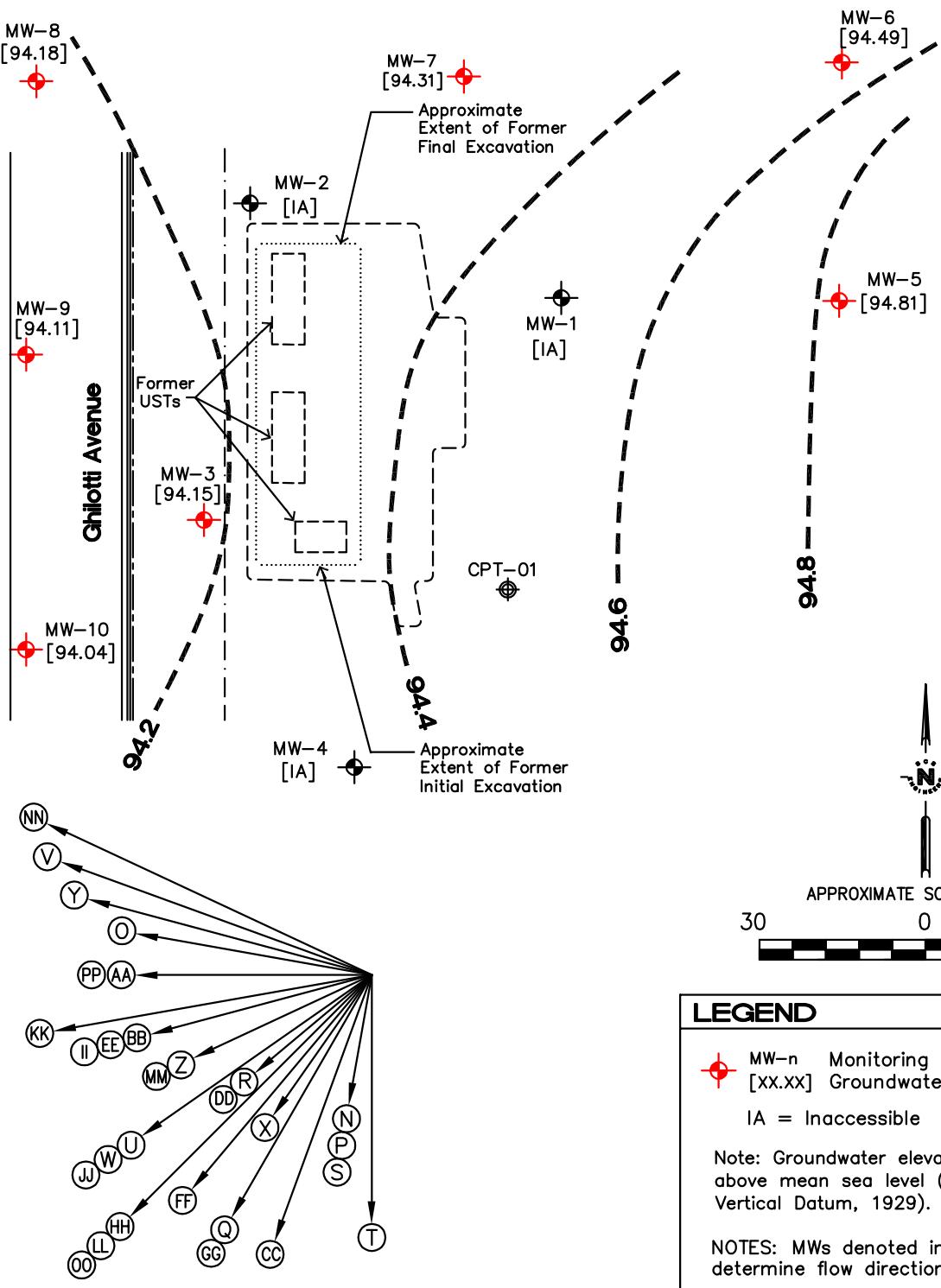
SITE LOCATION MAP

Ghilotti Construction Company
246 Ghilotti Avenue
Santa Rosa, California

APPROX. SCALE

FIGURE

1



GROUNDWATER FLOW LEGEND

Estimated Groundwater Flow Direction		Gradient Contour (Interval = 0.2 ft)	Identifier Tag	Date	Est. Flow Direction	Gradient Slope
		→ A	(LL)	4/6/04	S45°W	i = 0.002
Identifier Tag	Date	Est. Flow Direction	Gradient Slope	(MM)	7/7/04	S65°W
(N)	6/24/96	S10°W	i = 0.005	(NN)	11/11/04	N60°W
(O)	12/20/96	N80°W	i = 0.003	(OO)	2/11/05	SW
(P)	4/18/97	S10°W	i = 0.005	(PP)		West
(Q)	9/11/97	S30°W	i = 0.006			
(R)	6/19/98	S48°W	i = 0.002			
(S)	3/3/99	S10°W	i = 0.002			
(T)	6/2/99	Due South	i = 0.008			
(U)	12/28/99	S55°W	i = 0.003			
(V)	3/23/00	N68°W	i = 0.03			
(W)	6/20/00	S55°W	i = 0.003			
(X)	10/3/00	S35°W	i = 0.005			
(Y)	1/9/01	N75°W	i = 0.002			
(Z)	4/10/01	S65°W	i = 0.003			
(AA)	7/11/01	West	i = 0.003			
(BB)	10/10/01	S75°W	i = 0.004			
(CC)	1/9/02	S20°W	i = 0.003			
(DD)	4/5/02	S50°W	i = 0.002			
(EE)	7/3/02	S75°W	i = 0.004			
(FF)	10/24/02	S40°W	i = 0.005			
(GG)	1/22/03	S30°W	i = 0.002			
(HH)	4/17/03	S45°W	i = 0.002			
(II)	7/14/03	S75°W	i = 0.003			
(JJ)	10/7/03	S55°W	i = 0.004			
(KK)	1/2/04	S80°W	i = 0.002			

S C S E N G I N E E R S

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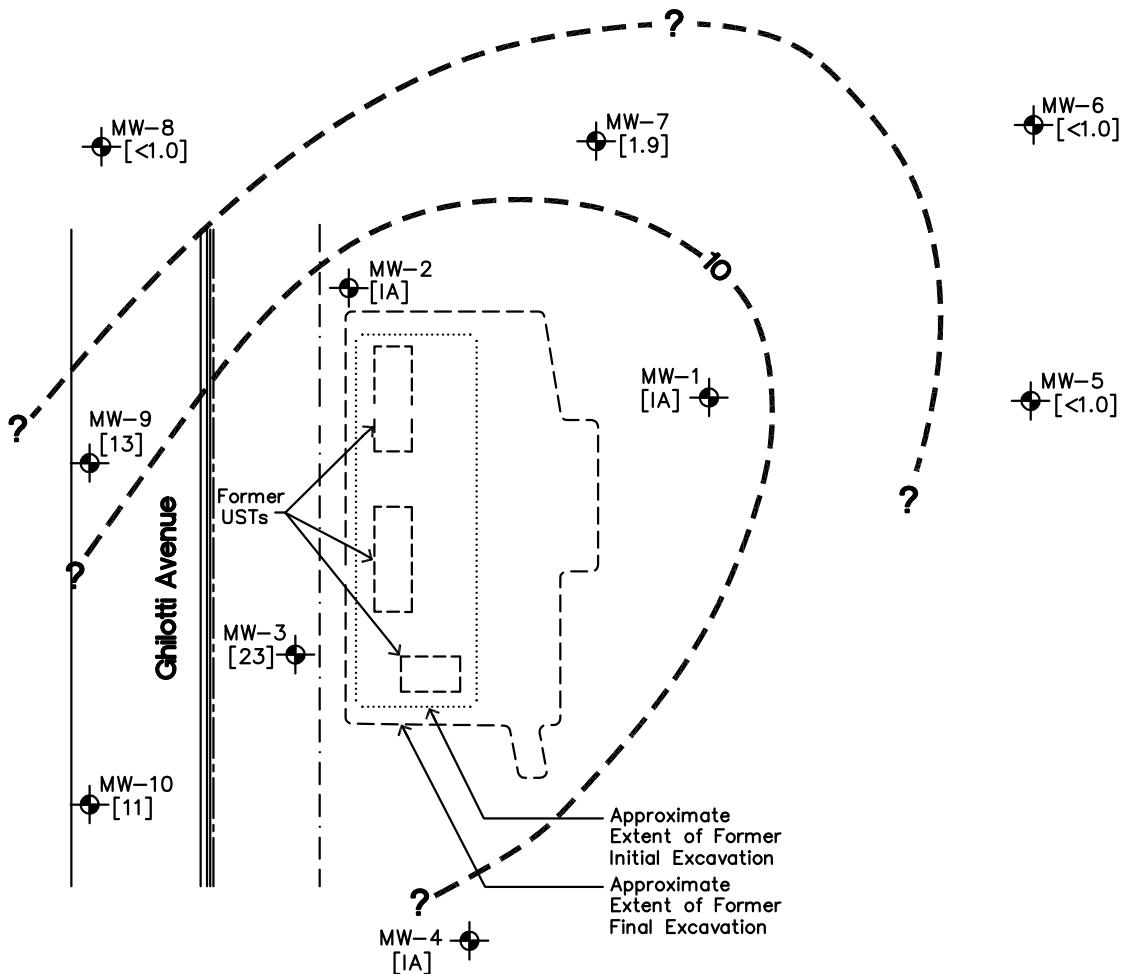
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DATE: 7/11/05 CHK. BY: APP. BY: SK

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GROUNDWATER FLOW DIRECTION AND GRADIENT FOR

PROJECT TITLE: GHILOTTI CONSTRUCTION COMPANY
246 GHILOTTI AVENUE
SANTA ROSA, CALIFORNIA

SCALE:
1" = 30'

FIGURE NO.:
2
SHEET 2 OF 2



APPROXIMATE SCALE IN FEET

30 0 30

LEGEND

- Monitoring Well Location
IA = Well Inaccessible
- Isoconcentration Line
MTBE, ug/L

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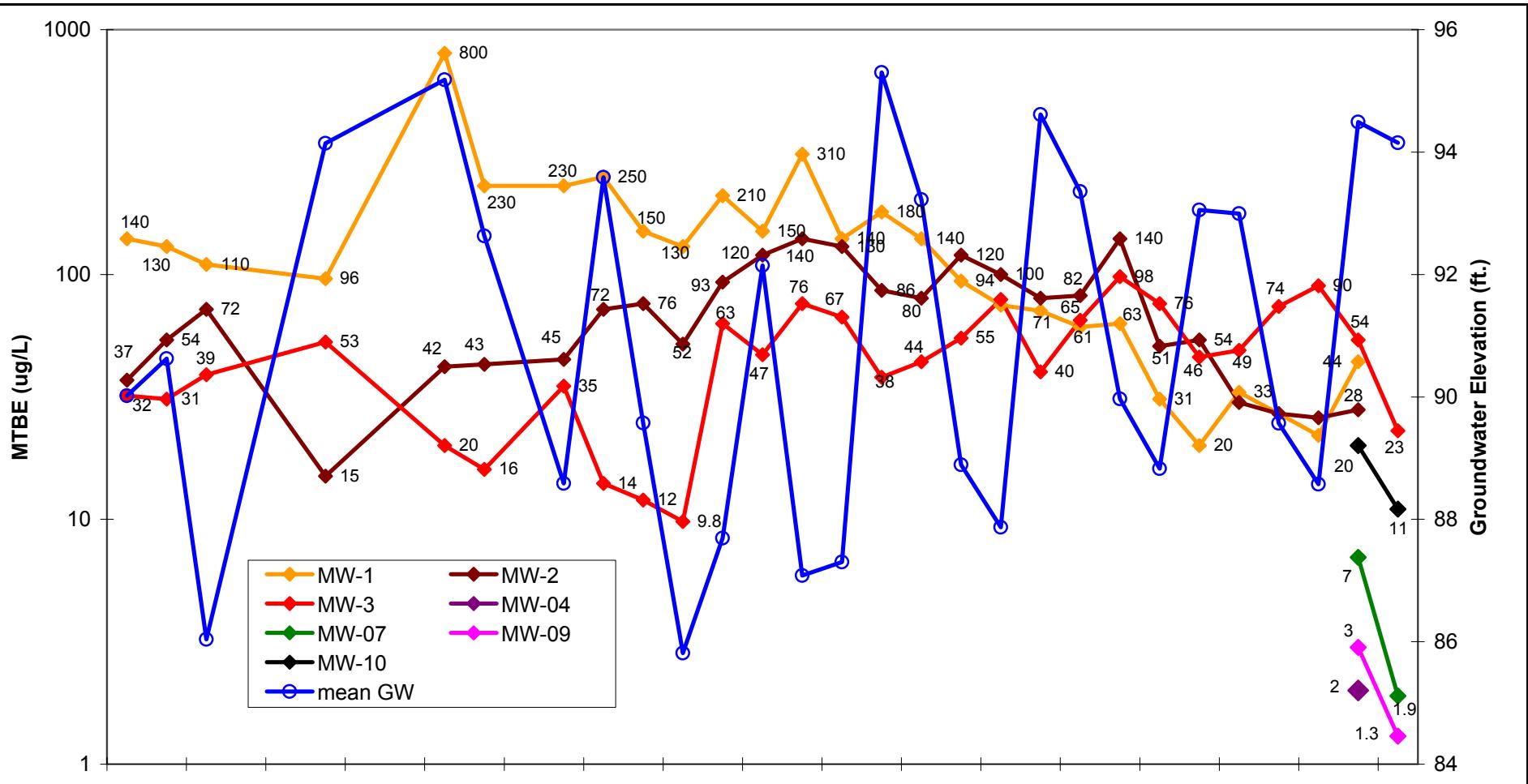
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PROJECT TITLE: GHILOTTI CONSTRUCTION COMPANY 246 GHILOTTI AVENUE SANTA ROSA, CALIFORNIA	FIGURE NO.: 3

Key to Diagram and Tables
246 Ghilotti Avenue, Santa Rosa

TPH-g	=	Total petroleum hydrocarbons in the gasoline range
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Xylenes
MTBE	=	Methyl tertiary butyl ether
Five Oxys	=	Five ether-based oxygenate compounds [diisopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tert-amyl methyl ether (TAME), MTBE, and tert-butyl alcohol (TBA)]
EDC	=	Ethylene dichloride ²
EDB	=	Ethylene dibromide ³
Pb Scavs	=	Lead scavengers (EDC, EDB)
mg/kg	=	Milligrams per kilogram
$\mu\text{g/L}$	=	Micrograms per liter

² EDC has been referred to as 1,2-dichloroethane (1,2-DCA) in previous reports.

³ EDB has been referred to as 1,2-dibromoethane (1,2-DBA) in previous reports.



Note: MW-1, MW-2, and MW-4 were inaccessible for the June 13, 2005 sampling event. All other wells not plotted have been below the laboratory RDL for MTBE.

SCS ENGINEERS	MTBE & Groundwater Elevation vs Time	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA PH: (707) 546-9461 FX: (707)544-5769	Ghilotti Construction Company 246 Ghilotti Avenue Santa Rosa, California	A
Drawn By: KLC	File Name: MTBE-GW	DATE: 07/18/05

Table 1: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	06/24/96	99.48	7.42	92.06	S10°W i = 0.005
MW-2		99.77	7.67	92.1	
MW-3		99.38	7.58	91.8	
MW-1	12/20/96	99.48	10.00	89.48	N80°W i = 0.003
MW-2		99.77	10.5	89.27	
MW-3		99.38	10.1	89.28	
MW-1	04/18/97	99.48	7.19	92.29	S10°W i = 0.005
MW-2		99.77	7.41	92.36	
MW-3		99.38	7.34	92.04	
MW-1	09/11/97	99.48	13.29	86.19	S30°W i = 0.006
MW-2		99.77	13.65	86.12	
MW-3		99.38	13.57	85.81	
MW-1	06/19/98	99.48	5.28	94.2	S48°W i = 0.002
MW-2		99.77	5.62	94.15	
MW-3		99.38	5.3	94.08	
MW-1	03/03/99	99.48	3.35	96.13	S10°W i = 0.002
MW-2		99.77	3.57	96.2	
MW-3		99.38	3.33	96.05	
MW-1	06/02/99	99.48	6.79	92.69	Due South i = 0.008
MW-2		99.77	6.91	92.86	
MW-3		99.38	7.04	92.34	
MW-1	12/28/99	99.48	12.73	86.75	S55°W i = 0.003
MW-2		99.77	13.16	86.61	
MW-3		99.38	12.86	86.52	
MW-1	03/23/00	99.48	4.85	94.63	N68°W i = 0.03
MW-2		99.77	5.33	94.44	
MW-3		99.38	4.91	94.47	
MW-1	06/20/00	99.48	8.44	91.04	S55°W i = 0.003
MW-2		99.77	8.84	90.93	
MW-3		99.38	8.57	90.81	
MW-1	10/03/00	99.48	13.6	85.88	S35°W i = 0.005
MW-2		99.77	13.98	85.79	
MW-3		99.38	13.87	85.51	
MW-1	01/09/01	99.48	13.31	86.17	N75°W i = 0.002
MW-2		99.77	13.71	86.06	
MW-3		99.38	13.31	86.07	
MW-1	04/10/01	99.48	6.79	92.69	S65°W i = 0.003
MW-2		99.77	7.22	92.55	
MW-3		99.38	6.92	92.46	
MW-1	07/11/01	99.48	11.39	88.09	West i = 0.003
MW-2		99.77	11.87	87.90	
MW-3		99.38	11.50	87.88	
MW-1	10/10/01	99.48	14.78	84.70	S75°W i = 0.004
MW-2		99.77	15.24	84.53	
MW-3		99.38	14.93	84.45	
MW-1	01/09/02	99.48	3.75	95.73	S20°W i = 0.003
MW-2		99.77	4.06	95.71	
MW-3		99.38	3.85	95.53	

Table 1: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	04/05/02	99.48	5.09	94.39	S50°W i = 0.002
MW-2		99.77	5.44	94.33	
MW-3		99.38	5.15	94.23	
MW-1	07/03/02	99.48	9.25	90.23	S75°W i = 0.004
MW-2		99.77	9.74	90.03	
MW-3		99.38	9.44	89.94	
MW-1	10/24/02	99.48	13.70	85.78	S40°W i = 0.005
MW-2		99.77	14.13	85.64	
MW-3		99.38	14.01	85.37	
MW-1	01/22/03	99.48	4.65	94.83	S30°W i = 0.002
MW-2		99.77	4.97	94.80	
MW-3		99.38	4.69	94.69	
MW-1	04/17/03	99.48	5.20	94.28	S45°W i = 0.002
MW-2		99.77	5.55	94.22	
MW-3		99.38	5.25	94.13	
MW-1	07/14/03	99.48	8.44	91.04	S75°W i = 0.003
MW-2		99.77	8.90	90.87	
MW-3		99.38	8.59	90.79	
MW-1	10/07/03	99.48	11.75	87.73	S55°W i = 0.004
MW-2		99.77	12.01	87.76	
MW-3		99.38	12.21	87.17	
MW-1	01/02/04	99.48	6.68	92.80	S80°W i = 0.002
MW-2		99.77	7.08	92.69	
MW-3		99.38	6.72	92.66	
MW-1	04/06/04	99.48	5.21	94.27	S45°W i = 0.002
MW-2		99.77	5.58	94.19	
MW-3		99.38	5.32	94.06	
MW-1	07/07/04	99.48	9.71	89.77	S65°W i = 0.003
MW-2		99.77	10.18	89.59	
MW-3		99.38	9.92	89.46	
MW-1	11/23/04	99.48	11.71	87.77	N60°W i = 0.003
MW-2		99.77	12.17	87.60	
MW-3		99.38	11.73	87.65	
MW-1	02/11/05*	99.48	4.90	94.58	SW i = 0.002
MW-2		99.77	5.21	94.56	
MW-3		99.38	4.86	94.52	
MW-04		98.31	3.87	94.44	
MW-05		100.20	5.52	94.68	
MW-06		100.95	6.23	94.72	
MW-07		100.17	5.57	94.60	
MW-08		98.37	3.89	94.48	
MW-09		98.46	4.02	94.44	
MW-10		98.04	3.73	94.31	

Table 1: Groundwater Flow Direction and Gradient - 1996 to Present
246 Ghilotti Avenue, Santa Rosa

Well #	Date Measured	Top of Casing Elevation (ft. > msl)	Depth to Groundwater (feet)	Water Level Elevation (ft. > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	06/13/05	99.48		Inaccessible	West i = 0.005
MW-2		99.77		Inaccessible	
MW-3		99.38	5.23	94.15	
MW-04		98.31		Inaccessible	
MW-05		100.20	5.39	94.81	
MW-06		100.95	6.46	94.49	
MW-07		100.17	5.86	94.31	
MW-08		98.37	4.19	94.18	
MW-09		98.46	4.35	94.11	
MW-10		98.04	4.00	94.04	

Note: Groundwater flow direction is rounded to the nearest 5° beginning in 1996 except for the 06/19/98 and 03/23/00 calculations.

* MW-04 through MW-10 were surveyed to msl on March 9, 2005.

Table 2: Domestic Well Analytical Results
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	OTHER OXY'S*
		µg/L							
DW-1	07/21/98	<50	NA	<50	<0.3	<0.5	<0.5	3.4	NA
	08/05/99	<50	NA	<50	<0.3	<0.5	<0.5	3	NA
	12/28/99	<50	NA	<50	<0.3	<0.5	<0.5	1	<1.0
	03/23/00	<50	<50	<50	<0.3	<0.5	<0.5	1.5	<1.0
	06/20/00	<50	<50	<50	<0.3	<0.5	<0.5	<1.0	<1.0
	10/03/00	NA	NA	NA	NA	NA	NA	1.5	<1.0
	01/09/01	NA	NA	NA	NA	NA	NA	1.1	<1.0
	04/10/01	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/10/01	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	10/10/01	NA	NA	NA	NA	NA	NA	<1.0	NA
	02/14/02	NA	NA	NA	NA	NA	NA	<1.0	NA
	04/05/02	NA	NA	NA	NA	NA	NA	0.59	<1.0
	07/03/02	NA	NA	NA	NA	NA	NA	<0.5	<1.0
	10/24/02	NA	NA	NA	NA	NA	NA	<0.5	<1.0
	02/14/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	04/17/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/14/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	10/07/03	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	01/02/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	04/06/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	07/07/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	11/23/04	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	02/11/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0

Note: * Analysis for MTBE by EPA Method 8020; Analysis for 5 oxy's (including MTBE) by EPA Method 8260B; <25 µg/L For TBA.

**Table 3: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa**

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-1	06/24/96	<50	<50	<0.3	<0.3	<0.5	<0.5	NA	NA	NA	NA	NA
	12/20/96	<50	<50	<0.3	<0.3	<0.5	<0.5	140	NA	NA	NA	NA
	04/18/97	<50	NA	<0.3	<0.3	<0.5	<0.5	130	NA	NA	NA	NA
	09/11/97	<50	NA	<0.3	<0.3	<0.5	<0.5	110	NA	NA	NA	NA
	06/19/98	<50	NA	<0.3	<0.3	<0.5	<0.5	96	<1.0	<1.0	<1.0	<25
	03/03/99	<50	<50	<0.3	<0.3	<0.5	<0.5	800	NA	NA	NA	NA
	03/24/99	<50	<50	<0.3	<0.3	<0.5	<0.5	360	NA	NA	NA	NA
	03/26/99	<50	<50	<0.3	<0.3	<0.5	<0.5	250	NA	NA	NA	NA
	06/02/99	<50	<50	<0.3	<0.3	<0.5	<0.5	230	NA	NA	NA	NA
	12/28/99	<50	NA	<0.3	0.66	<0.5	<0.5	230	<1.0	<1.0	<1.0	<25
	03/23/00	<50	<50	<0.3	<0.3	<0.5	<0.5	250	<1.0	<1.0	<1.0	<25
	06/20/00	<50	<50	<0.3	<0.3	<0.5	<0.5	150	<1.0	<1.0	<1.0	<25
	10/03/00	NA	NA	NA	NA	NA	NA	130	<1.0	<1.0	<1.0	<25
	01/09/01	NA	NA	NA	NA	NA	NA	210	<1.0	<1.0	<1.0	<25
	04/10/01	NA	NA	NA	NA	NA	NA	150	NA	NA	NA	NA
	07/10/01	NA	NA	NA	NA	NA	NA	310	NA	NA	NA	NA
	10/10/01	NA	NA	NA	NA	NA	NA	140	NA	NA	NA	NA
	01/09/02	NA	NA	NA	NA	NA	NA	180	NA	NA	NA	NA
	04/05/02	NA	NA	NA	NA	NA	NA	140	<1.0	<1.0	<1.0	<25
	07/03/02	NA	NA	NA	NA	NA	NA	94	<1.0	<1.0	<1.0	<25
	10/24/02	NA	NA	NA	NA	NA	NA	75	<1.0	<1.0	<1.0	<25
	01/24/03	NA	NA	NA	NA	NA	NA	71	<1.0	<1.0	<1.0	<25
	04/17/03	NA	NA	NA	NA	NA	NA	61	<1.0	<1.0	<1.0	<25
	07/14/03	NA	NA	NA	NA	NA	NA	63	<1.0	<1.0	<1.0	<25
	10/07/03	NA	NA	NA	NA	NA	NA	31	<1.0	<1.0	<1.0	<25
	01/02/04	NA	NA	NA	NA	NA	NA	20	<1.0	<1.0	<1.0	<25
	04/06/04	NA	NA	NA	NA	NA	NA	33	<1.0	<1.0	<1.0	<25
	07/07/04	NA	NA	NA	NA	NA	NA	27	<1.0	<1.0	<1.0	<25
	11/23/04	NA	NA	NA	NA	NA	NA	22	NA	NA	NA	NA
	02/11/05	NA	NA	NA	NA	NA	NA	44	<1.0	<1.0	<1.0	<25
	06/13/05							Well inaccessible				

**Table 3: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa**

Table 3: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-3	06/24/96	<50	<50	<0.3	<0.3	<0.5	<0.5	NA	NA	NA	NA	NA
	12/20/96	<50	<50	<0.3	<0.3	<0.5	<0.5	32	NA	NA	NA	NA
	04/18/97	<50	NA	<0.3	<0.3	<0.5	<0.5	31	NA	NA	NA	NA
	09/11/97	<50	NA	<0.3	<0.3	<0.5	<0.5	39	NA	NA	NA	NA
	06/19/98	<50	NA	<0.3	<0.3	<0.5	<0.5	53	<1.0	<1.0	<1.0	<25
	03/03/99	<50	<50	<0.3	<0.3	<0.5	<0.5	20	NA	NA	NA	NA
	06/02/99	<50	<50	<0.3	<0.3	<0.5	<0.5	16	NA	NA	NA	NA
	12/28/99	<50	NA	<0.3	0.45	<0.5	<0.5	35	<1.0	<1.0	<1.0	<25
	03/23/00	<50	<50	<0.3	<0.3	<0.5	<0.5	14	<1.0	<1.0	<1.0	<25
	06/20/00	<50	<50	<0.3	<0.3	<0.5	<0.5	12	<1.0	<1.0	<1.0	<25
	10/03/00	NA	NA	NA	NA	NA	NA	9.8	<1.0	<1.0	<1.0	<25
	01/09/01	NA	NA	NA	NA	NA	NA	63	<1.0	<1.0	<1.0	<25
	04/10/01	NA	NA	NA	NA	NA	NA	47	NA	NA	NA	NA
	07/10/01	NA	NA	NA	NA	NA	NA	76	NA	NA	NA	NA
	10/10/01	NA	NA	NA	NA	NA	NA	67	NA	NA	NA	NA
	01/09/02	NA	NA	NA	NA	NA	NA	38	NA	NA	NA	NA
	04/05/02	NA	NA	NA	NA	NA	NA	44	<1.0	<1.0	<1.0	<25
	07/03/02	NA	NA	NA	NA	NA	NA	55	<1.0	<1.0	<1.0	<25
	10/24/02	NA	NA	NA	NA	NA	NA	79	<1.0	<1.0	<1.0	<25
	01/24/03	NA	NA	NA	NA	NA	NA	40	<1.0	<1.0	<1.0	<25
	04/17/03	NA	NA	NA	NA	NA	NA	65	<1.0	<1.0	<1.0	<25
	07/14/03	NA	NA	NA	NA	NA	NA	98	<1.0	<1.0	<1.0	<25
	10/07/03	NA	NA	NA	NA	NA	NA	76	<1.0	<1.0	<1.0	<25
	01/02/04	NA	NA	NA	NA	NA	NA	46	<1.0	<1.0	<1.0	<25
	04/06/04	NA	NA	NA	NA	NA	NA	49	<1.0	<1.0	<1.0	<25
	07/07/04	NA	NA	NA	NA	NA	NA	74	<1.0	<1.0	<1.0	<25
	11/23/04	NA	NA	NA	NA	NA	NA	90	<1.0	<1.0	<1.0	<25
	02/11/05	NA	NA	NA	NA	NA	NA	54	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	23	<1.0	<1.0	<1.0	<25
MW-04	02/11/05	<50	NA	<1.0	<1.0	<1.0	1.1	1.9	<1.0	<1.0	<1.0	<25
	06/13/05	Well inaccessible										
MW-05	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25
MW-06	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25

Table 3: Groundwater Analytical Results - Monitoring Wells
246 Ghilotti Avenue, Santa Rosa

ID	Date Sampled	TPH-g	TPH-d	B	T	E	X	MTBE*	DIPE	ETBE	TAME	TBA
		µg/L										
MW-07	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	6.9	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	1.9	<1.0	<1.0	<1.0	<25
MW-08	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<25
MW-09	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	3.2	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	1.3	<1.0	<1.0	<1.0	<25
MW-10	02/11/05	<50	NA	<1.0	<1.0	<1.0	<1.0	20	<1.0	<1.0	<1.0	<25
	06/13/05	NA	NA	NA	NA	NA	NA	11	<1.0	<1.0	<1.0	<25

Note: *Analysis for MTBE by EPA Method 8020; Analysis for 5 oxy's (including MTBE) by EPA Method 8260B.

APPENDIX A

Well Purge Records, dated June 13, 2005

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW- 3

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-05

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-06

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-07

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-08

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-09

SCS ENGINEERS

WELL PURGE RECORD

2005 - 2nd Quarter

WELL NUMBER

MW-10

APPENDIX B

Analytical Sciences report #5061711, dated June 29, 2005



Report Date: June 29, 2005

Kevin Coker
SCS Engineers
3645 Westwind Boulevard
Santa Rosa, CA 95403

LABORATORY REPORT

Project Name: **Ghilotti Construction** **01203312.00**

Lab Project Number: **5061711**

This 7 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.
Laboratory Director



Oxygenates by GC/MS in Water

Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30329	MW-3	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	23	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.9	99.5	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.0	90.0	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	

Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30330	MW-5	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	ND	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d ₈ (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	18.2	91.0	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	



Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30331	MW-6	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	ND	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.9	99.5	70 – 130
toluene-d ₈ (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	18.1	90.5	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	

Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30332	MW-7	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	1.9	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.8	99.0	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.1	90.5	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	



Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30333	MW-8	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	ND	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.2	91.0	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	

Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
3034	MW-9	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	1.3	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.1	101	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.1	90.5	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	



Lab #	Sample ID	Oxygenated Gasoline Additives	Result (ug/L)	RDL (ug/L)
30335	MW-10	tert-butyl alcohol (TBA)	ND	25
		methyl tert-butyl ether (MTBE)	11	1.0
		di-isopropyl ether (DIPE)	ND	1.0
		ethyl tert-butyl ether (ETBE)	ND	1.0
		tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.1	101	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.0	90.0	70 – 130

Date Sampled: 06/13/05	Date Analyzed: 06/21/05	QC Batch #: 5605
Date Received: 06/17/05	Method: EPA 8260B	



LABORATORY

QUALITY ASSURANCE REPORT

QC Batch #: 5605

Lab Project #: 5061711

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d ₈ (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	18.2	91.0	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
30305	CMS	1,1-dichloroethene	25.6	25.0	102
	CMS	benzene	23.6	25.0	94.4
	CMS	trichloroethene	22.6	25.0	90.4
	CMS	toluene	24.9	25.0	99.6
	CMS	chlorobenzene	24.8	25.0	99.2

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.4	92.1	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
30305	CMSD	1,1-dichloroethene	25.4	25.0	101	0.78
	CMSD	benzene	23.4	25.0	93.6	0.85
	CMSD	trichloroethene	22.2	25.0	88.8	1.8
	CMSD	toluene	24.6	25.0	98.4	1.2
	CMSD	chlorobenzene	24.4	25.0	97.6	1.6

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.9	99.6	70 – 130
toluene-d ₈ (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	18.0	90.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



Analytical Sciences

CHAIN OF CUSTODY

P.O. Box 750336, Petaluma, CA 94975-0336
110 Liberty Street, Petaluma, CA 94952
(707) 769-3128



1

2

CHEMICAL INFORMATION

BILLING INFORMATION

COMPANY NAME: SCS ENGINEERS	CONTACT: Stacy
ADDRESS: 3645 WESTWIND BOULEVARD SANTA ROSA, CA 95403	COMPANY NAME: Chilotti Construction
CONTACT: Kevin Cox	ADDRESS: 246 Chilotti Ave Santa Rosa, CA
PHONE#: (707) 546-9461	PHONE#: (707) 546-9467
FAX #: (707) 544-5769	FAX #: 585-1221

LAB PROJECT NUMBER: S06171	SCS ENGINEERS PROJECT NAME: Chilotti Construction
SCS ENGINEERS PROJECT NUMBER: 01203312 CO	GEOTRACKER EDF: XY N GLOBAL ID: 106097203
COOLER TEMPERATURE _____ °C	
PAGE 1 OF 1	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRES. YES/NO	ANALYSIS		COMMENTS	LAB SAMPLE #
							TPH GAS/BTEX	TPH DIESEL/ MOTOR OIL		
1	MW-3	6-13	1245	119	4	X				30324
2	MW-5		230	1	4					30320
3	MW-6		210	1	4					30321
4	MW-7		230	3	3					30322
5	MW-8		185	2	2					30323
6	MW-9		185	4	4					30324
7	MW-10		185	4	4					30325
8										
9										
10										
11										

REUNQUALIFIED BY:		SIGNATURES		RECEIVED BY LABORATORY:	
REUNQUALIFIED BY:		DATE: 6-10-05	TIME: 3:50	RECEIVED BY:	
REUNQUALIFIED BY:		DATE:	TIME:	RECEIVED BY:	
REUNQUALIFIED BY:		DATE:	TIME:	RECEIVED BY:	